

## A question of causality between political corruption, economic freedom and economic growth in Europe

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*Economic, cultural, social, psychological, political, administrative and religious effects of corruption are manifested by functional, political and moral degradation of local public authorities, which is a result of the expansion of political corruption, by reducing the transparent and accountable political power or by social tensions and increasing impoverishment of the population.*

*In the executive activity, corruption has an effect on the reduced quality of public administration, the existence of an informal decision-making system and close links between organized crime, corrupt officials and politicians. Thus, outwardly effects of corruption, even in international relations, is manifested by the conduct of incompetent, irresponsible, provocative and subjective – conventional behavior of persons in positions of responsibility which, in dealing with foreign partners, primarily promotes personal and corporate interests against national interests, which, inevitably undermines the country's image and credibility as a partner in international relations.*

*This paper tries to show a more accurate picture of the extent of corruption in Europe, through individual analysis of indicators measuring corruption and by quantifying the relation between corruption and political, administrative and economic determinants factors, through a regressive “pool data” model. For a fine approximation of the decision-making mechanism, in accordance with the policies they generate, there is a necessity the knowledge and understanding of how the political elements are transformed into real elements to measure their incidence. This paper adds to the empirical literature on the relationship between corruption and economic growth by incorporating the impact of economic freedom.*

**Keywords:** Political corruption, economic freedom, economic growth

### 1. Introduction

It is not necessary to be adept of alarmist or panicard ideas to see that a threat, under various forms of manifestation, over the time, was always present in developing relations between people, that has perfected the specific methods of action, standing the myriad causes of conflict situations that have shadowed the evolution of human society, both socially and economically.

The complex and difficult process, sometimes contradictory, of transformation and radical restructuring that involves the transition from one political system to another, from a hypercentralized economy to a market economy, has on its content, intense phenomena of inherent social disorganization in a new form of organization.

Therefore, the causes of individual and social corruption must be seen in close interdependence and reported with the profound change processes that characterize society as a whole.

Socio-political effects of corruption is manifested by functional, political and moral degradation of local public authorities, which is a result of the expansion of political corruption, by reducing the

transparent and accountable political power or by social tensions and increasing impoverishment of the population.

The debate on the impact of corruption on economic performance goes beyond a “moralistic view” that unequivocally condemns corruption, that is why this research tries to link the corruption, economic freedom and economic growth and investigate whether they exist any causal relations.

In this paper, *the linkage between political corruption, economic freedom and economic growth* were examined in empirical context for European Union, over 1995-2010, in both directions: corruption causes economic growth or economic freedom or vice-versa, economic freedom or political freedom serves as a deterrent to corrupt activity. In particular, does greater economic freedom or greater political freedom yield a lower “corrupt” society?

This paper adds to the empirical literature on the relationship between corruption and economic growth by incorporating the economic freedom and the extend approach of corruption in two theoretical points, in a more general political economy of public policy: 1) the proxy for political corruption and bureaucratic corruption and 2) a dimension of good governance.

Following the introductory part, related literature was overviewed in the second part and the methodology of the study and econometric model were put forth in the third part and finally the findings were interpreted and a general review was made.

## **2. Literature review**

The determinants of corruption, in line with the multifaceted nature of the phenomenon, are diverse and heterogeneous and the relevant literature has addressed a large number of these determinants and come up with different results. That is why the aim of this paper is to review and extend the empirical evidence on the relationship between corruption, economic freedom and economic growth, by responding to these questions: 1) corruption causes economic growth or vice-versa; 2) economic growth causes economic freedom or vice-versa; 3) economic freedom causes corruption or vice-versa?

Under forms, effects and the controversial issues arising from corruption phenomena, we consider necessary to clarify the conditions that allow its expression. Thus, we can better understand the meanings and implications of corruption on socio-economic performance.

### **2.1. Review from definition to methods of measurement**

In an attempt to identify the degree to which corruption and economic freedom correlates with the development indicators, as these are reflected in statistics and reports prepared by various organizations, we consider useful the description of how the indicators are designed.

Also, such an approach is necessary, in order to understand which indicators are a prerequisite for development and which indicators reflect the state of development, in terms of items that can appear as contradictory.

In this respect, considering the controversies in the field, with their openings and their limits, we can identify a number of definitions and of indicators that shape the notions of corruption, economic freedom and growth.

Corruption is a problem that mainly arises in the interaction between government and the market economy where the government itself must be considered endogenous (Andvig et al., 2000). The approach of corruption occurs basically in this main forms: bribery, embezzlement, fraud, extortion, cronyism, nepotism, patronage and graft, but there is no international consensus on the meaning of corruption (Rohwer, 2009):

- Bribery is understood as the payment (in money or kind) that is given or taken in a corrupt relationship. Equivalent terms to bribery include, for example, kickbacks, commercial arrangements or pay-offs. These are all notions of corruption in terms of the money or favours paid to employees in private enterprises, public officials and politicians. They are payments or returns needed or demanded to make things pass more swiftly, smoothly or more favourably through state or government bureaucracies.
- Embezzlement is theft of resources by people who are responsible for administering them, e.g., when disloyal employees steal from their employers. It is not considered corruption from a strictly legal point of view, but is included in a broader definition.
- Fraud is an economic crime that involves some kind of trickery, swindle or deceit. It involves manipulation or distortion of information, facts and expertise by public officials for their own profit.
- Extortion is money and other resources extracted by the use of coercion, violence or threats to use force.
- Cronyism is a form of corruption in which political officials and businessmen show preference to friends when appointing people to positions of power, awarding contracts, and delegating tasks related to their office.
- Nepotism or favouritism is the natural human proclivity to favour friends, family (wife, brothers and sisters, children, nephews, cousins, in-laws etc.) and anybody close and trusted. Favouritism is closely related to corruption insofar as it implies a corrupted (undemocratic, “privatised”) distribution of resources.
- Patronage as corruption phenomenon is the illegal conduct which gives an individual or group some private advantage which is contrary to the public interest. Corruption may become part of patronage, for example, if it is legally required that government contracts go to the lowest bidder, yet a client uses influence to win a contract even though his or her bid is higher than others.
- Graft is defined as a use of public stature to gain illegal benefit. Technically, corruption covers an entire host of abuses, of which graft is one. Graft and corruption are charges that are typically leveled at highly-placed government officials, who are able to use public funds to improve their own fortunes due to increased access, influence, knowledge or power that comes with an elevated position.

This approach explains the evolution of corruption in terms of society evolution and in terms of values that characterize different stages of its development, from traditional to modern society and postmodern. The causes and reasons for corrupt behavior are considered, therefore, rooted mainly in socio-cultural contexts persistent over time. These seven categories capture most of the types of corruption described in the literature. There may, however, be certain acts that correspond to people’s intuitions of corruption and do not fit neatly into one of these categories.

Systemic corruption has important implications in terms of assessment and program design. It encompasses the notions of both *grand corruption* (involving members of the political and economic elite) and *administrative corruption* (which involves the interactions of mid- and lower-level officials with small and medium-size businesses and ordinary citizens) (Lanyi and Azfar, 2005).

These different approaches to corruption, as social, political and economic phenomenon, cause a number of difficulties in transposition in the indicators for measuring. Corruption indicators differ in conceptual breadth, some have more dimensions than others, so, most of them provide a single measure of corruption intended to reflect a mix of various aspects of corruption.

Regardless of one's preferred conceptual definition, the choice of measurement techniques from a limited set of feasible alternatives inevitably produces an implicit definition that can differ substantially from one's ideal. Any pair of assessment methodologies will measure a different (if unknown) mix of these various dimensions of corruption.

In recent years, corruption measures, at the regional, national and global level, mostly using perception surveys as the leading method to collect data, tend to group around two types:

- measures of the existence and quality of institutions, rules and procedures as governance and anticorruption inputs;
- measures of what those mechanisms lead to in practice as governance and anticorruption outputs.

Indicators have proved very useful in raising awareness, making cross-country comparisons and conducting statistical analysis, helping establish correlations between corruption and a wide range of variables (U4 – Anti-Corruption Resource Center, 2009).

We can distinguish between the following types of corruption indicators (UNDP, 2008):

- Perception-based indicators and experience-based indicators - are based on the opinions and perceptions of corruption in a given country among citizens and experts;
- Indicators based on a single data source and composite indicators - are produced by the publishing organisation without recourse to third-party data whereas composite indicators aggregate and synthesize different measures generated by various third-party data sources
- Proxy indicators - measure corruption indirect, by aggregating as many opinions (or voices) and signals of corruption, or by measuring the opposite: anti-corruption, good governance and public accountability mechanisms

**Table 1: provides an overview of possible international corruption indices**

Source	Indicator name	Website link	Conceptual dimension
Transparency International	Corruption Perception Index	<a href="http://www.transparency.org/policy_research/surveys_indices/cpi">http://www.transparency.org/policy_research/surveys_indices/cpi</a>	Perceptions of extent of petty corruption. Bribery
	Global Corruption Barometer	<a href="http://www.transparency.org/policy_research/surveys_indices/gcb">http://www.transparency.org/policy_research/surveys_indices/gcb</a>	Perceptions; Experience with corruption; Bribery
	Bribe Payers Index	<a href="http://www.transparency.org/policy_research/surveys_indices/bpi">http://www.transparency.org/policy_research/surveys_indices/bpi</a>	Original, Bribery
Bertelsman Transformation Index	Bertelsman Transformation Index	<a href="http://www.bertelsmann-transformation-index.de/bti/">http://www.bertelsmann-transformation-index.de/bti/</a>	Proxy
European Bank and World Bank	Business environment and enterprise performance survey	<a href="http://data.worldbank.org/data-catalog/BEEPS">http://data.worldbank.org/data-catalog/BEEPS</a>	Original proxy, corruption in the business sector, petty corruption, business regulations

Source	Indicator name	Website link	Conceptual dimension
World Bank, European Commission, DFID	Public Expenditures and Financial Accountability	<a href="http://web.worldbank.org/WBSITE/EXTERNAL/P-EFA/0,,menuPK:7313471~pagePK:7313134~piPK:7313172~theSitePK:7327438,00.html">http://web.worldbank.org/WBSITE/EXTERNAL/P-EFA/0,,menuPK:7313471~pagePK:7313134~piPK:7313172~theSitePK:7327438,00.html</a>	Assesses budget performance, transparency of budget formation process, audit reports and other budget related practices
World Bank	Country policy and institutional assesment	<a href="http://go.worldbank.org/7NMQ1P0W10">http://go.worldbank.org/7NMQ1P0W10</a>	Proxy. Corruption in financial, trade and public sectors. degree of regulations. Quality of fiscal management
	Worldwide Governance Indicators	<a href="http://info.worldbank.org/governance/wgi/index.asp">http://info.worldbank.org/governance/wgi/index.asp</a>	Hybrid
World Economic Forum	Global Competitiveness Index	<a href="http://gcr.weforum.org/gcr2011/">http://gcr.weforum.org/gcr2011/</a>	Proxy
Global Barometer Consortium	Regional Barometers in Africa, Asia, Latin America and Europe	<a href="http://www.afrobarometer.org">www.afrobarometer.org</a> <a href="http://www.asianbarometer.org">www.asianbarometer.org</a> <a href="http://www.latinobarometro.org">www.latinobarometro.org</a> <a href="http://ec.europa.eu/public_opinion/index_en.htm">ec.europa.eu/public_opinion/index_en.htm</a>	Proxy; Democracy; Political Participation
Global Integrity	Global Integrity Index	<a href="http://www.globalintegrity.org/report">http://www.globalintegrity.org/report</a>	Proxy
Freedom House	Freedom house corruption index	<a href="http://www.freedomhouse.org/">http://www.freedomhouse.org/</a>	Perceptions of extent of petty corruption.
Heritage Foundation and Wall Street Journal	Index of economic freedom	<a href="http://www.heritage.org/Index/">http://www.heritage.org/Index/</a>	Perceptions
Political Risk Services Group	International Country Risk Guide	<a href="http://www.prsgroup.com/ICRG.aspx">http://www.prsgroup.com/ICRG.aspx</a>	Original. Corruption within public sector and private sector. Includes bribes, patronage, nepotism, secret party funding and conflict of interest
Mo Ibrahim Foundation	Ibrahim Index of African Governance	<a href="http://www.moibrahimfoundation.org/en/section/the-ibrahim-index">http://www.moibrahimfoundation.org/en/section/the-ibrahim-index</a>	Perceptions, proxy, public sector corruption
Center on budget and policy prioritirs	Open budget Index	<a href="http://internationalbudget.org/what-we-do/open-budget-survey/">http://internationalbudget.org/what-we-do/open-budget-survey/</a>	Proxy – Availability of budget documents lead to greater oversight, transparency and accountability

Source: modified and adapted from UNDP (2008), A Users' Guide to Measuring Corruption

Conceptual, methodological and empirical materials strongly support the message that no single corruption measure, nor single data source on corruption, is most appropriate for all purposes.

In this paper our attention is on aggregate indicators which combine information from multiple sources, as is Transparency International's annual Corruption Perceptions Index and the World Bank's Worldwide Governance Indicators who capture six key dimensions of governance (Voice & Accountability, Political Stability and Lack of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and especially Control of Corruption) between 1996 and present. The two data sets are regarded as the most reliable for cross-national comparisons and cover a large number of countries.

Corruption Perceptions Index ranks countries/territories based on how corrupt their public sector is perceived to be. A country/territory's score indicates the perceived level of public sector corruption on a scale of 0 - 10, where 0 means that a country is perceived as highly corrupt and 10 means that a

country is perceived as very clean. A country's rank indicates its position relative to the other countries/territories included in the index.

The Control of Corruption index is an aggregation of various indicators that measure the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Measurement tools that aggregate a number of existing data sources, like the CPI or WGI, have their strengths and weaknesses. On the one hand, composite indicators can be useful in summarizing a lot of information from several sources, and in so doing they can limit the influence of measurement error in individual indicators and potentially increase the accuracy of measuring a concept as broad as corruption. On the other hand, one can run the risk of losing conceptual clarity (Rohwer, 2009).

Believing that corruption erodes economic freedom by introducing insecurity and uncertainty into economic relationships, the approach that we propose expresses the elementary truth that the economic policies oriented towards interventionism and redistribution will fail to ensure prosperity. Therefore, the only sustainable way to reaching this goal is to promote systematic economic freedom.

To highlight Economic Freedom, in this paper, we will use The Index of Economic Freedom is a series of 10 economic measurements created by The Heritage Foundation and The Wall Street Journal. Its stated objective is to measure the degree of economic freedom in the world's nations. The main assumption in the index is that economic freedom is a positive cultural and societal influence.

The Index measures the level of economic freedom in 161 countries around the world. To measure economic freedom, it focuses the study on 10 different factors:

1. Business Freedom - is a quantitative measure of the ability to start, operate, and close a business that represents the overall burden of regulation as well as the efficiency of government in the regulatory process;
2. Trade Freedom - is a composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services;
3. Fiscal Freedom - is a measure of the tax burden imposed by government. It includes both the direct tax burden in terms of the top tax rates on individual and corporate incomes and the overall amount of tax revenue as a percentage of GDP;
4. Government Spending - considers the level of government expenditures as a percentage of GDP. Government expenditures, including consumption and transfers, account for the entire score;
5. Monetary Freedom - combines a measure of price stability with an assessment of price controls. Both inflation and price controls distort market activity;
6. Investment Freedom - in an economically free country, there would be no constraints on the flow of investment capital. Individuals and firms would be allowed to move their resources into and out of specific activities both internally and across the country's borders without restriction;
7. Financial Freedom - is a measure of banking efficiency as well as a measure of independence from government control and interference in the financial sector;
8. Property Rights - is an assessment of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state;
9. Freedom from Corruption - is derived primarily from Transparency International's Corruption Perceptions Index (CPI);

10. Labor Freedom - is a quantitative measure that looks into various aspects of the legal and regulatory framework of a country's labor market.

The Index provides a framework for understanding how open countries are to competition, the channels of state intervention in the economy, whether through taxation, spending or overregulation and, also the strength and independence of a country's judiciary to enforce rules and protect private property. But it is important to notice that Economic freedom is distinct from political freedom (participation in the political process on equal conditions, actual competition for political power, and free and fair elections) and from civil freedom (protection against unreasonable visitations, access to fair trials, freedom of assembly, freedom of religion, and freedom of speech).

Knowing that Economic freedom is an important factor accounting for Economic growth is probable on purely theoretical grounds, and to measure economic performance we will use the level of GDP.

## **2.2. The linkage between corruption, economic freedom and economic growth**

The linkage between corruption, economic freedom and economic growth brings to forefront the method of correlation, that opened new ways for quantitative social science. In our paper, the causality, as a simple explanatory principle, of events was broadened to include the notion of association between events, such:

- The linkage between corruption and economic growth;
- The linkage between economic growth and economic freedom;
- The linkage between corruption and economic freedom.

The vast body of literature considered highlights two serious problems in examining the relationship between corruption, economic freedom and economic growth (Swaleheen and Stansel, 2007):

- differences among countries, known as “time invariant heterogeneity” or “country fixed effects”, in terms of religion or culture;
- institutions have an important role in explaining cross-country differences in corruption (Triesman, 2000) and the rate of growth (Islam, 1995).

### **2.2.1 The linkage between corruption and economic growth**

Empirically, there is broad consensus that corruption is detrimental to the economic performance of countries on the long term, in contrast with the ideas that corruption is a standard distortion, because corruption exhibited its harmful effects on growth.

Ugur and Nandini (2011a, b) addressing the impact of corruption on economic growth theoretically and empirically, using a meta-synthesis of the empirical evidence on the direct and indirect effects of corruption on growth shows that the theoretical/analytical literature can be listed as follows:

- corruption has a negative impact on economic growth;
- the relationship between corruption and growth is not uniform between countries and over time;
- corruption's effects on growth are mediated through contextual factors such as the level of development, the degree of centralisation of corrupt activities and the quality of governance institutions;

- the indirect adverse effects of corruption on growth are higher than its direct effects, and the highest indirect effect percolates through the public finance/expenditure channel, followed by the human capital channel.

Mauro (1995) in the first econometric study about impact of corruption on economic growth and investment across countries finds that much of the effects of corruption on growth take place indirectly, through the effect on investment, and when investment is controlled for, the direct effect of corruption on growth is weak. Although he did not find a significant relationship between corruption and growth, he did find a significant relationship between bureaucratic efficiency and growth (Mauro's results were later confirmed by Aliyu and Elijah (2009), Méon and Sekkat (2005, 2007) and, Aidt et al. (2008), Haque and Kneller (2005), Blackburn and Forgues-Puccio (2007), who report consistently that corruption is detrimental to economic growth).

Rahman et al. (1999) examined the effects of corruption on economic growth and gross domestic investment for Bangladesh. This study extended the earlier studies by Baro (1991) and modifying Mauro's model by including two regional dummy variables, find that corruption is significantly and negatively associated with cross-country differences in economic growth and gross domestic investment. The authors suggest that corruption retards economic growth by reducing foreign direct investment, so, the caution is that endogeneity must be looked at more seriously in investigating the relationship between corruption and economic growth.

Méndez and Sepúlveda (2006) argue that the relationship between corruption and growth is non-monotonic (quadratic) and that this relationship depends on the degree of political freedom, because corruption has a beneficial impact on long-run growth at low levels of incidence but is harmful at high levels and that there therefore may exist a growth maximizing level of corruption

### **2.2.2 The linkage between economic growth and economic freedom**

The main conclusion of the studies was that more economic freedom fosters economic growth, so, there exists a positive impact of various measures of economic freedom on the rate of economic growth:

- Dawson (2003), De Haan and Sturm (2000, 2001), Adkins et al. (2002), Pitlik (2002), Weede and Kampf (2002), using as dependent variable the growth and as independent variable the change in economic freedom index obtained as result an effect significant positive;
- Ayal and Karras (1998), Goldsmith (1995), Dawson (2003), Hanson (2000), Ali and Crain (2002), Carlsson and Lundstrom (2001), Pitlik (2002), Weede and Kampf (2002), Mahmood et al. (2010) using as dependent variable the growth and as independent variable the level of economic freedom index obtained as result an effect significant positive;
- Hanke and Walters (1997), Leschke (2000), using as dependent variable the GDP per capita and as independent variable the level of economic freedom index obtained as result an effect significant positive;
- Gwartney et al. (2006, 2011), De Haan and Sturm (2000), Heckelman and Stroup (2002), Adkins et al. (2002), using as dependent variable the GDP per capita and as independent variable the level of economic freedom index obtained as result an effect not significant;
- Cebula (2011) investigates the impact of the ten forms of economic freedom on economic growth in OECD nations, using both, panel least squares estimations and panel two-stage least squares estimations find that the natural log of purchasing-power- parity adjusted per capita real GDP in OECD nations was positively impacted by monetary freedom, business freedom,



investment freedom, labor freedom, fiscal freedom, property rights freedom, and freedom from corruption.

A number of other studies attempting to clear the relationship between economic growth and economic freedom, answering the question whether freedom causes growth, growth causes freedom, or the two are jointly bilateral:

- The empirical result of Farr et al. (1998), in one of the earliest studies on causality between economic freedom and the level of GDP was the existence of feedback between economic freedom and the level of GDP;
- Then, Heckelman (2000) in an attempt to perform the causal relationship with economic growth, suggested the average level of economic freedom precedes economic growth.
- De Haan and Sturm (2000) also pointed out that economic freedom brought countries to their steady state level of economic growth more quickly, but did not increase the rate of steady state growth.
- Vega-Gordillo and Álvarez-Arce (2003) yielded interesting results that economic freedoms appeared to enhance economic growth.
- Dawson (2003) shows that economic freedom is the result of growth rather than a cause of growth.

### **2.2.3 The linkage between corruption and economic freedom**

To better understand the link between corruption and economic freedom, most of the studies examine this relationship both in the form of informal economic activity and in the public-sector bureaucracy:

- Méndez and Sepúlveda (2006) find that in “free” countries, corruption and growth are inversely and nonlinearly related. In countries that are “not free,” the relationship between corruption and economic growth is not statistically significant.
- Jong-Sung and Khagram (2005) argue that economic factors are often considered to be the prime causes of corruption. For instance, wealthy people have greater motivation and more opportunity to exhibit corrupt practices, whereas poor people are more vulnerable to being exploited and are less able to hold wealthy people accountable for their decisions and actions.
- Graeff and Mehlkop (2003) report that, depending on whether a country is rich or poor, different types of improvements in economic freedom have differential effects on corruption. They indicate that the legal structure affects corruption more in rich countries, whereas access to sound money is significant for poor countries.
- Billger and Goel (2009) show that, among the most corrupt nations, greater economic freedom does not appear to cut corruption

There is a relatively widespread literature which, by applying the econometric methods developed mainly in growth econometrics, examines the relationship between corruption, economic freedom and economic growth, but, in these empirical studies, many difficulties lies in obtaining proper measures of corruption, that identify and describe its linkage with the components of economic freedom and economic growth.

## **3. Methodology and Model**

First, the empirical approach in this paper, in order to *highlight the linkage between corruption and economic growth* will monitor the “good governance” defined by the six dimensions, namely, Voice

and Responsibility, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption, and its incidence on the economic growth in the European Union.

The general econometric specification is formulized as follows:

$$gdp_{i,t} = \alpha_{i,t} + \beta voice_{i,t} + \delta pol_{i,t} + \theta gov_{i,t} + \varphi regu_{i,t} + \gamma law_{i,t} + \lambda cor_{i,t} + \psi dummy + \epsilon \quad (1)$$

In this linear model, left-hand-side variable is economic activity as represented by GDP growth and denoted by *gdp*. It is employed in order to measure the influence of governmental activities on economic growth and development. On the other hand, there exist six independent right-hand-side variables describing the dimensions of “good governance”. Besides, model also includes a *constant* and a *dummy variable* which represents 2008 financial crisis. If the influence of crisis is progressing in questioned period for related country, it takes the value of 1; otherwise 0.

Data used in the paper, for EU 27, gathered from World Bank governance indicators called the KK Datasets, who is a set of world wide measures of six composite dimensions of governance perception indicators for 105 countries. These indicators are oriented so that higher value correspond to better outcomes, on a scale refers to the point estimates range from -2.5 to 2.5. These estimates are also rescaled and ranked in percentile (0-100). The lower percentile is ranked as worse off governance indicators whereas upper percentile is ranked as best governance for any given country. Thus, governance appears as a positive multidimensional concept concerning diverse essential aspects of institutional structures which, when associated, singularize every nation.

In the paper, linear panel data estimation methods were utilized in order to estimate the equation above. It is necessary to test the stability of series before the identification of the relationship between variables. Regression analysis would not be consistent and spurious regression problem would occur if unstationary data are used. In this regard, Levin, Lin Chu (LLC) (2002) and Im, Peseran and Shin (IPS) (2003) unit root tests were used for stationary investigation.

When empirical literature is reviewed, it is seen that the ordinary least squares (OLS), the fixed-effects model (FEM), or the random-effects model (REM) are employed for linear panel data estimations.

After being proved the stationarity of the variables, developed model i.e., (1) was estimated by linear panel data estimation method. Estimation results are reported in table 2. Hausman test confirms that there is no correlation between individual random effects and explanatory variables, indicating that the REM is consistent and efficient. LM test statistics also confirm our model selection and refer to the one-way REM that includes only individual effects. Diagnostic tests show that developed model contain both group and time effects and there exists no multicollinearity, no heteroscedasticity and autocorrelation.

**Table 2: Panel Data Regression Results**

Dependent Variable: GDP			
<u>Independent variables</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>t-stat.</u>
constant	4,777	2,069	2,39[0.01]**
voice	-5,881	2,421	-2,42[0.01]**
pol	-0,576	1,362	-0,42[0.67]
gov	5,965	1,283	4,64[0.00]***
regu	0,184	1,470	0,12[0.90]
law	-1,714	1,629	-1,05[0.29]
cor	-0,279	1,125	-0,24[0.80]
dummy	-8,306	1,016	-8,16[0.00]***
R <sup>2</sup> =0,47      LM <sub>time</sub> =0,39[0.71]      VIF=1,754[0.58]			
Adj. R <sup>2</sup> =0,42      LM <sub>group</sub> = 360,80[0.00]***      Wooldridge=0,285[0.23]			
F Stat.=9,98[0.00]***      Hausman=0,00[1.00]      LM <sub>h</sub> =11,025[0.56]			

Source: authors' own construction

Note: Probability values of t-statistics are in brackets.

\*\*\*, \*\* and denote significant at %1, %5 respectively.

According to table, government effectiveness and regularity quality effect GDP positively while voice & accountability, political stability & no violence/terrorism, rule of law and control of corruption negatively. Nonetheless, only voice & accountability and government effectiveness are statistically significant. That is, a rising score in voice & accountability decreases economic activity and a rising score of effectiveness of the EU governance increases economic activity raises in European Union. In addition, reported in table 2, dummy variable showing the effect of the 2008 crisis is highly significant and points out that financial crisis influences the growth rates of EU countries in a negative way.

## 4. Conclusions

In this paper, it is aimed to investigate the empirical *linkage between political corruption, economic freedom and economic growth*, but this proposed approach is highly applied due by the complexity of concepts addressed. We find ourselves in a position to analyzed and synthesized only a part of our initial approach, the linkage between corruption and economic growth, but hoping that our purpose will continue in a future paper.

The results recorded in this paper are closely correlated with the EU reality, and this negative impact of voice and accountability indicator on growth is worrying, because voice and accountability matter for development for two sets of reasons. First, powerlessness, voicelessness and a lack of accountability are constitutive of poverty, as such, enhancing voice and accountability leads in itself to a reduction in poverty. Second, voice and accountability can lead to other outcomes such as greater ownership and pro-poor policies which can lead to a reduction in poverty. It should expect a stronger correlation between these two variables if good governance is the result of a long historical accumulation of individuals with good morality (as argued by culturalists) or of feedback effects and increasing returns between social trust and good.

On the other hand, there is no significant relationship between the other four dimensions and Union's economic growth. There are two major factors behind this situation. First one is about sample period which covers 1996-2010. While EU had 15 members referring to EU15 in 1996, in 2004 it contained 25 and finally in 2007 the number reached 27. Hence, it is reasonable that evaluating EU's structure

which formed different time periods might lead a mistake. Second, member countries have heterogeneous political and economic structure which differs from each other. So that, it could be natural to find an insignificant relationship in questioned variables in this kind of structure. In addition, the latest financial crisis that is still effecting member economies has a strong adverse influence on the growth rates of the Union in an expected way.

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